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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,707	03/27/2006	Mitsunobu Yoshida	1003510-000165	3545
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EXAMINER				
HARRIS, GARY D				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
04/03/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

# Office Action Summary

**Application No.**

10/573,707

**Applicant(s)**

YOSHIDA ET AL.

**Examiner**

GARY D. HARRIS

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2009.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5 and 9-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3, 5, & 9-16 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date 03/02/2009  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/20/2009 has been entered.

### ***Response to Arguments***

2. Applicant's arguments, see remarks filed on 03/20/2009, with respect to the rejection(s) of claim(s) 1-3, 5, 9-14 under 35 U.S.C 103 have been fully considered but are not persuasive. Applicant appears to be purchasing off the shelf items such as Hilitecore, Thin-Gage Hilitecore, High Tension Hilitecore, Homecore, and Semicore or other commercially available steel sheets. As disclosed in applicant's specification, any thermoplastic or thermoset material can be used. Since the applicant is using commercially available products with commercially available resin the structure as claimed is rejected. Examiner is now incorporating a new reference and is subsequently making a new ground(s) of rejection in view of Watanabe et al. JP 404170012A. Examiner has no way of testing materials defined by JIS H 0505 so the materials used in the specification are relied upon for rejection of the claims.

Claims 1-3, 5, & 9-16 are examined in the instant application.

***Claim Rejections - 35 USC § 102 / 35 USC § 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

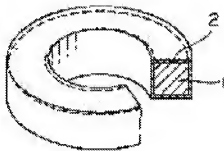
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 9-13, 15 & 16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Watanabe et al. JP 404170012A.

As to Claim 1, 15 & 16, Watanabe et al. JP 404170012A discloses a magnetic core formed by winding an amorphous metal ribbon (plate similar to applicants disclosure) with a flexible epoxy resin coating (applicant's high molecular compound) which are known in the art to include polyurethane, acrylic and cyanoacrylics. As can be seen in the figure below the structure has at least two layers that are partially in contact with one another.



Watanabe et al. does not disclose the volume resistivity. However, this would be an inherent feature as applicant is claiming a magnetic metal and a high molecular weight resin used for a magnetic core. Although the prior art does not disclose resistivity as it relates to applicant's claim, the claimed properties are deemed to be inherent to the structure in the prior art since the Watanabe et al. reference teaches an invention with a substantially similar structure and chemical composition as the claimed invention. Products of identical structure and composition cannot have mutually exclusive properties. The burden is on the Applicants to prove otherwise. (See MPEP 2112.02)

Alternatively, a resistivity as claimed would be obvious to one of ordinary skill in the art.

In the event it is shown that Watanabe et al. does not disclose the claimed invention with sufficient specificity, the invention is obvious because Watanabe et al. discloses the claimed constituents and discloses that they may be used in combination. One would optimize the coating layer constituents such that a coefficient of elasticity on the

magnetic core would minimize the noise attenuation and maximize the magnetic properties and be a results effective variable MPEP 2144.05 that would be optimized by one of ordinary skill in the art through routine experimentation in minimizing attenuated noise and optimizing magnetic properties.

As to Claim 2, Watanabe et al. JP 404170012A it is interpreted that the epoxy coating would cover not less than 50% as applicant discloses using similar epoxy resin system in the reduction of attenuated noise. It would have been optimized by one of ordinary skill in the art through routine experimentation to require a coating covering not less than 50% as claimed to reduce attenuation noise of the magnetic core.

As to Claim 3, Watanabe et al. JP 404170012A examiner interprets the substrate as a surface and the epoxy being used on the substrate and would encompass the claim.

As to Claim 9-12, Watanabe et al. JP 404170012A discloses a magnetic core and inductor. Additionally, the intended use of the instantly claimed apparatus is noted, however, the intended use does not patentably distinguish said claimed apparatus over prior art. The intended use of the claims does not structurally limit the apparatus. In addition, the prior art apparatus is capable of performing the desired function.

As to Claim 13, Watanabe et al. JP 404170012A teaches a flexible epoxy resin coating (applicant's high molecular compound) which are known in the art to include polyurethane, acrylic and cyanoacrylics and ketones.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. JP 404170012A in view of Pettigrew et al. US 4,960,651.

As to Claim 5, Watanabe et al. JP 404170012A does not disclose the laminant is made of an amorphous metal and a silicon steel sheet. However, Pettigrew et al. '651 discloses the use of amorphous metal and silicon steel similar to applicant (Col. 5, Line 23-45). The amorphous material is used to improve the permeability and magnetic isotropy (Col. 4, Line 38-67). While the silicon based steels are used to thwart deactivation (Col. 8, Line 33-55). It would be obvious to one skilled in the art to utilize a silicon steel with an amorphous material as taught by Pettigrew to enhance magnetic properties and limit deactivation of the structure.

As to Claim 14, Watanabe et al. JP 404170012A discloses the use of epoxy but does not disclose the use of polyimide resin, a sulfone resin, and an amide-imide resin systems. However, Pettigrew et al. teaches the use of polyimide (manufactured by ICI) in order to achieve a high magnetic signal in the security gate (Col. 14, 15, Line 65-69, 1-5 respectively). It would be obvious to select an engineering resin such as a polyimide resin, a sulfone resin, and an amide-imide resin system to achieve a high magnetic signal. Additionally, the use of this type of engineering resin system is well known in the art.

5. Claims 1-3 & 9-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Pettigrew et al. US 4,960,651, and further in view of Jin et al. US 7,106,163.

As to Claim 1, 15 & 16, Pettigrew et al. '651 discloses magnetic layers (interpreted as two or more) in partial contact (via discrete islands) (Col. 9, Line 47-64) utilizing Fe-Si-B alloys (col. 5, Line 54-59) similar to applicant. Pettigrew et al '651 discloses the magnetic output being dependent on the thickness of the magnetic material but, does not disclose the resistivity of the layered structure. However, Jin et al. '163 discloses a polypropylene thermoplastic (high molecular compound) in contact with a magnetic material and manipulation of permeability by addition of soft magnetic materials (utilizing JIS 0505 resistivity) overlapping applicants resistivity (see figures 3 & 4). It would have been obvious to one skilled in the art to manipulate the resistivity in the Pettigrew '651



invention in order to control the relative permeability of the core member as taught by Jin et al. 163 (Col. 7, Line 30-56). Additionally, this would be optimized by one of ordinary skill in the art through routine experimentation MPEP 2144.05 that would be optimized by one of ordinary skill in the art through routine experimentation manipulating the volume percent of magnetic material as disclosed by Jin (see figure 4).

As to Claim 2-3, Pettigrew et al. '651 discloses a polymer (applicant's high molecular compound) over a two layer magnetic component being made of an amorphous metal and a stainless steel (Col. 14, Line 22-54) and sectional area magnetic output being dependent on the thickness of the magnetic material (Col. 11, 12, Line 65-68, 1-9 respectively) but, does not disclose resistivity. However, as previously disclosed in claim 1, Jin et al. '163 discloses a polypropylene thermoplastic (high molecular compound) in contact with a magnetic material and manipulation of permeability by addition of soft magnetic materials (utilizing JIS 0505 resistivity) overlapping applicants claim (see figures 3 & 4). It would have been obvious to one skilled in the art to require a resistivity from 0.1 to  $10^8$  ohm-cm in the Pettigrew '651 invention in order to control the relative permeability of the core member as taught by Jin et al. 163 (Col. 7, Line 30-56).

As to Claim 5, Pettigrew et al. '651 discloses the use of amorphous metal and silicon steel similar to applicant (Col. 5, Line 23-45).

With respect to claims 9-12, the intended use of the instantly claimed apparatus is noted, however, the intended use does not patentably distinguish said claimed apparatus over prior art. The intended use of the claims does not structurally limit the apparatus. In addition, the prior art apparatus is capable of performing the desired function.

As to Claim 13, Pettigrew et al. '651 discloses the high molecular compound (polymer film) over a two layer magnetic component being made of an amorphous metal and a stainless steel (Col. 14, Line 22-54) and sectional area magnetic output being dependent on the thickness of the magnetic material (Col. 11, 12, Line 65-68, 1-9 respectively) but does not disclose the polymer being utilized. However, Jin '163 discloses the use of resins such as polyester and thermosetting resins such as silicone resin (silicon containing resin) or any mixture that would be a favorable insulating material (Col. 5, Line 13-27). It would have been obvious to one skilled in the art to utilize polyester, a thermosetting and/or silicon containing material in order to optimize insulating material properties.

As to Claim 14, Pettigrew et al. '651 discloses the high molecular compound (polymer film) over a two layer magnetic component being made of an amorphous metal and a stainless steel (Col. 14, Line 22-54) and sectional area magnetic output being dependent on the thickness of the magnetic material (Col. 11, 12, Line 65-68, 1-9 respectively) but does not disclose the polymer being utilized. Jin '163 discloses the use of a polyphenylene sulfide (PPS) which examiner interprets as being a sulfone

containing resin for insulating properties (Col. 12, Line 12-19). It would have been obvious to use a sulfone containing resin in order to enhance insulating properties.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY D. HARRIS whose telephone number is (571)272-6508. The examiner can normally be reached on 8AM - 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1794

Gary D. Harris/  
Examiner, Art Unit 1794